War Department saying, "your rank will be returned to colonel on such and such a date. You're entitled to be home two weeks before that.' And each time one of these would come I'd call the theater commander and say that I was due to leave now, the first of February or whatever. And he'd say I couldn't do that. "Well," I said, "here's what's happened." "Okay, you just keep on staying and I'll get that changed." So he kept getting it changed. But finally, with a revised deadline of 15 May, and we were within 30 days of closing the theater, I said, "I don't want to stay any longer. I'm not going to push it, but I do want to be home for two weeks with this exalted rank, I'll never see it again." So on the first of May in 1946 I flew home and was returned to colonel on the 15th or something like that, and then I went up to the st. Paul District as colonel, District Engineer.

One more thing before we move on. I thought coming back now with Speck Wheeler as Chief of Engineers, boy I had it made! I could get myself a nice job. so I reported in to General Wheeler, and he welcomed me home. I asked where I was going, and he said, 'I've got some ideas for you. Can you come in tomorrow morning with what you'd like, and we'll see." That was fine with me, so I showed up the next morning, and he had his personnel chief there; they had big books. He said, "All right, now to start with I'm going to tell you what I really want you to do. I've got a very key job that we've just established in the Pentagon that you're ideal to fill, and it would be a real help if you can take that job." And he gave me a buildup for about 15 minutes. And I finally asked if I could say what I really thought, and he told me to go ahead. "Well," I said, "sir, I haven't been in a District for 16 years. It looks to me like if I don't get a District Engineer job now I'll never get one, and I feel like I'm getting short changed, because I think it's part of my career, and I ought to have a chance at it.' He said, 'I was afraid you'd say that. All right, I'll see what we can do for you now. What District would you like to have?"

Well of course I'd called home that night before and talked with my bride and asked where we wanted to go. She said Mobile; and I said fine.

Jacksonville, fine. Savannah, fine. New Orleans, fine. So I stood in front of the desk, and he asked where I wanted to go, and I said, "I'd like to go to Mobile." But somebody had just gone to Mobile: somebody else had just gone to Jacksonville. I said, "General, would you mind telling me where there are vacancies?' So they turned the pages, turned the pages, and turned them back again. Finally they said, "The St. Paul District," and I said, "I want to go to the St. Paul District."

The Chief said, "That's a wise choice. It's the only one you can get. It's an old-line District: they've got a lot of experience there, and if you go there for six months and keep your mouth shut you'll get to be a good District Engineer.' I thanked him and told him I would take his advice. And that's how I went to the St. Paul District. But having lived three years in the environs of India and Ceylon, I went to a completely opposite climate.

After a short vacation, once again in Clearwater, the whole family took off for St. Paul by car. I reported about mid-June, if I remember rightly. I think it was a wise choice by General Wheeler. I don't know whether there were any other Districts open or not, but he did take cognizance of the fact that I had been absent from civil works a long time, and he put me in a District that was not under a pressure cooker at the time, and with very experienced, able personnel. St. Paul District had been a very busy District, particularly in the thirties, during the channelization of the upper Mississippi. The personnel were very stable. I very wisely learned a great deal from them, which I was later able to use when I moved from St. Paul to the Mobile District.

The District's workload in St. Paul was relatively small. There were quite a few small flood control projects, major drainage, small reservoirs; primarily for flood control and to some extent for water supply. There was a lot of work on the operation and maintenance of navigation on the upper Mississippi. And there was additional work going on, contracts, on locks and the extension of navigation up into the city of Minneapolis. There

also was quite a problem in public relations, in that the navigation system had been operating long enough that the people in Wisconsin and Minnesota had more or less forgotten the extent to which they benefited from the navigation project, and in turn had gotten around to the fish and wildlife side of life: that nothing must be done to interfere with the growth and development of the fish or birds.

We had considerable work in this field. With the advice of some of my staff I got pretty smart for a change and hired as the public relations man, the technical liaison officer for the St. Paul District, a relatively young man who had come from the U.S. Fish and Wildlife Service. Mr. Warren Nord was well trained in that field and had experience for quite a few years, and a nice personality. And we put him in and told him his job was to tell them the truth throughout the area, find out what they really felt like and wanted, but primarily, in addition to that, to see to it that they got a real understanding of what was involved.

The usual taking of real estate for a reservoir is based on pivoting from the dam, which tends to create a major taking in the upper ends of the reservoir in order to provide flowage for the high waters to not encroach on someone else's land. In the St. Paul District there had been a determination made in the early days of navigation improvement to pivot them about the midpoint of the lake, which cut more than in half the taking in the upper half of the reservoir. But in turn that meant that in times of high water you actually had low water at the dam itself, which sometimes required additional dredging. This also affected the backwater channels throughout the reservoir. And many of the hunters and fishermen felt that the st. Paul District and its operation was doing its best to disrupt the natural regimen of the river. We made a little model, a moving model, and the public relations man went up and down the river explaining it to any groups that would listen--Rotary Club, Kiwanis, Chamber of Commerce.

Q. Were there any organized environmental groups that were specifically involved?

A: Oh yes, the fish and wildlife associations were there. This was a very sports-minded area. And as

a matter of fact if you went back to the early days and looked into the history you found conditions at the time I'm talking about so much better than they had been that it's remarkable. But people just don't remember that. They can remember where grandfather used to take them fishing when they were a little boy, and it's no longer accessible, or something of that kind, or it gets flooded. But anyhow, most of the three years that I was in St. Paul we were fighting that battle, but we did make progress. And this use of the man who knew more about wildlife than the rest of us, including most of the critics, was beneficial to us.

On the reservoirs, our area of responsibility touched the Missouri on the west, where water and flood control and power were very important features. We operated in the eastern half or better of North Dakota, and I got a lesson from a project in this area. The state of North Dakota had a water board [the North Dakota Water Commissioners], in essence headed by the governor, and they met about every three or four months to keep up with the progress. They more or less ran herd on the Corps of Engineers and the Bureau of Reclamation in this field. And they also deliberately set their own projects in priority and got the whole state to agree that project so-and-so was number one, whereupon they spoke with one voice in Washington, on the Hill, and in the administration. And they were very effective.

The first time as District Engineer I went out to Bismarck to attend one of these meetings and make my presentation, I thought I knew a lot about my District. I had been there about two months. And after I sat through that meeting I realized that the governor of North Dakota knew about three times as much about my projects as I did, and that was the last time he knew three times as much about my projects: They weren't trying to ride me on the thing, they just knew more. That wasn't the way it had to be. I had to know as much about it as they did.

We had one project in Valley City, North Dakota--Baldhill Dam--which had an effect on the Missouri River work in that it was in the same state and it could compensate to some extent for

some of the things that were to be done there.84 And it would be affected by the Missouri-Souris project if it ever was completed.85 As usual, people living in the reservoir bottom resisted the taking of their land, for which I didn't blame them, but I had a hard time there in public relations.

Once again, it was before Mr. Nord. I was invited out for a Fourth of July address to the little city of Arlee, North Dakota. It's just a little town. I arrived there in early afternoon, and I didn't find a soul in the place. Finally a man came up from a basement level and said, "Are you Colonel Wilson?" I said yes, and he told me to come down. I went down, and he said, "I'm the man that got you invited out to make this talk. Whatever talk you brought, forget it, because what we want to know is why do you have to take the farmland."

Well, I had a patriotic speech in my pocket, which I put away. He told me that the whole town was out at the edge of town at a fair, that they would come in about six-thirty or seven, and when they filled the hall we would start. That was some night: When I started talking, it was like talking to a bunch of cold-eyed fish. I started off by quickly saying, "I know what you want. I know why you don't like what we are going to do. I want you to be sure you realize that this has been analyzed and authorized by the Congress and appropriated for by Congress. And they tell us what to do, and we've been told to do this, so we're going to do it. Now, from now on let me tell you the things we could do to make it easier for you, to make it possible for you to get your money out promptly, and to get relocated and so on." That pretty well broke the opposition, but it was a rough night.

And incidentally, I was sent back from my next assignment at the time of the dedication of the Baldhill reservoir, and I found to my pleasure that prior to the dedication, prior to completion of the total project, that there had been a flood, that the project had operated beautifully, that it had saved damages to Valley City downstream of the dam far more than had been spent on the entire project to that time. So that made me feel pretty good. The other projects were small, small dams, but it was something to learn on and get experience with.

Q: What accounted for the District's involvement in Alaska?

A: There was a very interesting responsibility in the St. Paul District when I joined it, which would be different than almost any other District might have. and I believe it's worth discussing a little bit. It was basically tied to the matter of permafrost, the permanently frozen ground which lies under about one-fifth of the earth's surface and is prevalent in Alaska and particularly in Siberia. In construction for World War II in Alaska, the Corps of Engineers, the Army, and the Air Force had run into it and realized they didn't know enough. So they started some research on it and had apparently assigned this research subsequently as a continuing project to st. Paul District.[86] Before the war ended, as they began phasing out, I think, they passed it on to the St. Paul District, because when I got there we had a research area in Alaska near Ladd Field at Fairbanks. We had a fine young man named Barney Trawicky as resident engineer, and a couple of assistants.

We had a section in the District Office in St. Paul which was doing library research and supervising the work being done up in Alaska and also supervising a contract with Purdue University on using air photography to interpret the location or extent of permafrost. It was something that needed to be done, no question, because, for instance, in the Fairbanks area at Ladd Field you were pretty close to the southern limit of permafrost. It was in an almost balanced area. The permafrost was heavy to the north of it and spotty to the south. If you scraped the natural insulation and the vegetation off over the permafrost, it could thaw down very quickly and only have maybe 15 or 20 feet to go and drop out, whereas further [sic] north you'd get a thaw right there where you took off the insulation, but it wouldn't go through the permafrost. There were a lot of lessons to be learned. How to live with it, how to build through it, how to build new roads without having the bulldozers disappear down out of sight the next day when you came back to them.

Q: Was there thought of having to work under these conditions in a future conflict?

A: There was a thought of having to do it in a future conflict or in trying to build up Alaska as a protected area, and there was also a thought of having to do it if we got into a fracas with some other country and got over into their bailiwick. The reason why we particularly had the contract was to try and find out more about using air photos to interpret.

Now during World War II there had been quite a program in the South Pacific to determine what the geological conditions were by means of air photography that showed what kind of vegetation growths there were, and this would indicate something. Well, they found out that with permafrost they could do the same thing in general. It would enable you to select areas to go and try and get a new airfield built and to select other areas that under no circumstance you would get near them because you were sure to have trouble. It wouldn't pinpoint the exact extent of the area, but you could pretty well depend that if you picked the ones that looked best on the aerial photographs and landed and went there, that you would have a good start in those areas as opposed to the others. Basically the intent of the whole program was to retain and refine the lessons learned, or those which should have been learned, in World War II, so that they could guide future work in northern climes and also to develop methods of selecting by air these areas which were the ones to go and explore first.

Then on the Purdue. [University] contract, Professor [Bernard] Woods was the main man, and a young man named Bob Frost was also working with him as a graduate student. He later became a Ph.D. They were spearheading this contract. In the District it was managed by a separate Division headed by [Major] Henry J. Manger, a civilian employee, who on active duty had been District Engineer of St. Paul in World War II. In OCE, as I remember it, the guidance came from a research branch in military construction. I remember the names of Tom Pringle and Bob Philippe. It was a successful program, and I think it should be mentioned here.

Similarly the main effort of the permafrost research was being carried out in the same elements in OCE and St. Paul. In Fairbanks, just outside of Ladd, as I said, we had this small research area. In order to attract and keep good men we combined research and practicality by constructing three residences in the research area, each with a different type of foundation. And our three key people lived in the houses that were erected on top of these foundations. At Northway, a World War II airfield, for several years, even though the field was closed, we continued to heat a fair-sized hangar all winter and kept track of the continuing drop in the permafrost level underneath it and the extent to -which the sun had an effect. The south side was going way down, and on the north side it was a lesser thaw. This program also paid later dividends in some of the lessons. Several of the people, Trawicky, Frost, and so on, were helpful in the Thule work in the midfifties, as well as in northern Canada.87

Incidentally, the St. Paul District, Manger, me, and one other, and representatives of OCE participated, about 1948 in England, in a so-called world conference on permafrost. We were some of the experts present. Also, before I left the St. Paul District in June of 1949, I initiated, at the request of OCE, a program of research on snow by seeking contracts with the University of Michigan, the University of Nevada, and Stanford University. Now this was basic research. I mean, what is a snowflake and so on, to get going into a broader discussion and research on this material. After I left, Henry Manger and his division were moved [Wilmette, IL]. Then the New England Division laboratories (pursuing a fairly extensive program under OCE guidance in ice, frost, and so on) and the permafrost and snow programs got closer and closer and ultimately became the snow, ice, and permafrost organization. BY now I think it continues, and I sure hope it preserves the tricks of the trade, as the U.S. Army Cold Region Research and Engineering Laboratory in Hanover, New Hampshire.88

The last spring that I was in St. Paul, Barney Trawicky called me and wanted to know if I'd give him permission to visit the St. Paul District

office. He wanted to fly down and pick up a car and drive it back up to Alaska. I said, "Okay, I'll be glad to authorize that because we have some need to get you here and discuss some of the programs, provided you'll give me a ride back to Alaska." And it turned out that we organized a little convoy, including some of the Alaska men who ran the Alaska Highway Department. We had a panel truck and two cars, about six of us,. who drove back up there, and it was extremely interesting. I was amazed. It reminded me an awful lot of the Ledo Road. but under different circumstances. It was paved by a substance we never had use of in Burma. We deliberately made the trip before the spring thaw so that we had snow-covered road, which was real nice and good driving. We spent the nights in the former construction camps that had been converted to hostels. It was extremely interesting. Okay, what else do you want to know about St. Paul?

Q: What about flood problems in the District? Weren't they usually a result of melting snows?

A: Oh yes, we had the usual ones. The problem in the st Paul District is that the Red River of the North runs north, and nothing else in this country runs north. So when it thaws, it doesn't thaw downstream, it thaws upstream. So your water comes flowing down, and it's blocked by the ice and it spreads out, and the Red River of the North could get to be 10 or 15 miles wide. It's a Canadian problem as well as a U.S. problem. The Red River goes up past Winnipeg. There were a good deal of international relationships required in trying to work it out and work together, and we organized ourselves pretty well, to be sure we flashed the news and the warning to them as fast as it developed. Incidentally, shortly after I retired, years later, I got asked to come back up there as a consultant to the province of Manitoba in getting prepared to fight a flood which was going to be a big one, and it was very interesting.

Q: It was one that they knew about ahead of time. It must have been a rush job, though.

A: Well, yes. You raised little levees about three or four feet high and that could be enough because it

spread so far. But where was it going to happen and how high was safe? I went up there and spent three or four days with some people from the St. Paul District and me as a consultant and the people in the province who were going to fight it. It was a good.exercise, and I think it did its job.

One thing, again, remember that I suggested earlier that you have intellectual curiosity. Well, recreation was becoming a growing thing in our work as far as I could see. I decided my last winter, when activity was somewhat reduced--and boy they can have snow up in that country--that I ought to find out more about recreation and what was being done to plan for it. So I got permission from my Division Engineer and the Chief's office to go visit the Division and District people who were out in Little Rock and Tulsa and visit their projects. They were in a big program with reservoirs and so on. also a tremendous amount of recreation development in the Ozarks and some other areas. I took two people with me, one from the engineering division and one from the operations branch, and we went down there for about two weeks.

We drove around and visited the different reservoirs, some finished, some under construction, and saw what they were doing. We saw the tremendous impact it was having, and the impact that the use was having on the operations side of the Corps projects and the fact that you had better plan for it in advance. And I think we educated ourselves pretty well, went back to St. Paul, and started putting it into effect on a small scale in our planning. And immediately thereafter I got ordered to Mobile, where I hit just as they were into a very large program. I then knew more than many of the experts down there about the forward work that was being done in the Corps in that direction. So there was a real payoff. I didn't even have long enough to forget the people's names.

By the way, for a while I was District Engineer of two Districts. Bill Leaf, the District Engineer in Rock Island, died on his way to his 25th reunion at the USMA in 1948.[89] He just dropped dead. The Division Engineer in St. Louis called me and told me to go down there and take both Districts until he could find out who was going to replace him. So

for about a month I was District Engineer of St. Paul and of Rock Island, and that wasn't the easiest life in the world, either. I had to sign all their efficiency reports at that time. It was an extremely difficult operation, but we got through it.

And in June 1949 I received orders to take over the Mobile, Alabama, District as District Engineer. The wheel had made a complete turn.

Q: You must have been happy about the Mobile assignment.

A: I was happy, my wife was happy, and my kids were happy, although I thoroughly enjoyed the work and life up in St. Paul. We arrived in Mobile in June of '49, just about 20 years later than when I had first arrived here, and we entered a District which was real big and real proud of all the effort it had put out in World War II. Many of the key civilian personnel were the same ones under whom I had worked in 1929. There were half a dozen of the key branch chiefs and division chiefs who had been in positions of authority when I was looking up at the District from the bottom, and suddenly here I am with them, still the same young fellow who didn't know anything back in 1929. I think they were glad to have me back, but I'm pretty sure they figured they had it made.

On my last trip to Washington before going to Mobile, the new Chief, Lew Pick-he's the one who moved me down there--said that the chief technical assistant down there had been District Engineer during World War II, and he thought he was still running the District. I was to go down and get him under control. There had been one District Engineer since then, but he never could break the system. So I was to go get it back into the routine.

Q: Do you think your assignment to Mobile was a combination of your being the right man for that job and your earlier experience with the District?

A: I don't know. I was in the Chief's office in about March or April. It was the first time I had been there since Lew Pick had become Chief [1 March